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THE RELATION OF THE CREDIT SYSTEM TO THE VALUE OF MONEY

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The phenomena of credit present different aspects according to the point of view from which they are approached; although, of course, a correct analysis must lead us to similar conclusions, irrespective of our starting point. Some points of view and methods of approach, however, will undoubtedly cause the data to yield more readily to discussion than will others. It is worth while, therefore, to exercise some care in choosing a starting point for one's discussion. For my own purpose, it has seemed best to treat the subject from the view-point of the action of society as a unit in effecting its exchanges of goods. The question of the relation of credit and prices, then, becomes a discussion of the adjustment which society makes between its different modes of effecting exchanges, and it would appear to be simpler to follow the changes from this standpoint.

Moreover, it would be possible to trace the effects of the phenomena we are considering by starting with the idea that changes in prices are caused by the extension of credit, rather than the reverse. The objection to this mode of procedure lies in the fact that, broadly speaking, credit expands only in response to demand. It is entirely possible,—indeed it very likely happens at times,—that credit anticipates and forces a demand for more means of exchange. If an important cheapening in the credit process were suddenly discovered and adopted, doubtless the banks could properly be regarded as a starting point of a series of changes affecting the

relation between money and credit. This, however, is so exceptional a situation, and the opinion is so generally held that credit can expand only as demand for it enlarges, that it is more satisfactory to treat the subject from the view-point of changing demand. We then ask ourselves the question, How does the credit mechanism respond to such changes in demand?

In the time available, only an outline of the subject can be presented. Moreover, the discussion must be incomplete without some account of its relation to the general theory of the value of money. In order to make my position clear, therefore, I wish to state very briefly some things which, in the discussion, I must take for granted.

In the first place, it is taken for granted that the law of demand and supply applies in some way to the determination of the value of money, as it does to the value of other commodities.

The value of commodity money is not, under any circumstances, proportional to its quantity. Nevertheless, with money, as with other commodities, a change either in the supply of, or in the demand for, money, tends to disturb the ratio of exchange between it and other articles. This will result, irrespective of our view as to the course in which the causal relation runs as between money and goods, in determining the price level; and irrespective, too, of any particular theory of value. That is to say, a change in the price level, or the value of money, may take place on account of changes on the money side or on the goods side.

In the next place, money is a peculiar commodity. It does not wear out, practically speaking; and so it may perform its service indefinitely. Moreover, it may per-

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form its work directly, as in the case of money payments, or indirectly, as by the use of credit. In either case, it effects exchanges and makes payments.

Society has a choice of means of exchange and payment at different costs. It meets a demand for more medium of exchange, or for the transaction of a larger volume of business, by the least expensive readjustment of the exchange system possible at the time, with the result that the marginal utility of the money article, for all uses, is the same, at the same time. We may exchange goods either by barter, by money exchange, or by credit exchange. Changes in the supply of money may not manifest themselves in price changes, because the credit system may distribute the pressure so as to maintain the previous price equilibrium. In other words, an increase in the supply of money to effect a given volume of exchanges may not change the price level, because it may simply displace, to a certain extent, other means of exchange previously employed. On the other hand, a change in the demand for means of exchange may be met, within limits, by the credit mechanism, without an increase in the supply of money, and with smaller change of prices than would occur if there were no credit exchanges.

The great service of the credit mechanism, ~~then~~, is in allowing changes in the volume of exchanges, within limits, without ~~occasioning or~~ making necessary, any change in the supply of money used in effecting them; in so adjusting itself to a new supply of money, or a new demand for it, as to cause the minimum disturbance of prices.

We confine our discussion, of course, to bank credit. It is through the use of standard money as a reserve

that the credit system exerts its influence on the price level. It is important to consider for a moment the exact nature of the service rendered by reserve money. President Hadley very truly remarks that the most important function of money now is its service as a reserve. If we have an adequate amount of standard money for reserves, we can use other things as media of exchange; if, however, our reserves are not sufficient, no amount of other media of exchange will give us steady prices or a stable monetary system.

The standard of money held as reserve is, of course, the same as the medium of direct money exchange. Its use as a reserve provides, however, a method of performing the exchange service more effectively. It may be objected that the service performed by reserve money is not different in character from that of money used in direct exchange, and that its influence, therefore, cannot differ from the influence of money used in direct exchange, so far as concerns the establishment of a price level. But it is doubtful, at least, whether such a statement can be successfully defended. It is true that money used in reserves does not perform any new service, but it performs the old service in a much more effective way. Consequently, a much smaller amount of it is necessary to maintain, in an indirect way, the price level which would require a large amount if used only in direct money exchange.

This point is important enough to justify a little elaboration. The same power may produce consequences of different magnitude, according to the way it is used. A hundred pounds of hand pressure directly applied may not move a rock that is easily lifted when the same pressure is applied through a properly adjusted

lever. This, of course, is not an analogy, nor is any argument drawn from it. The illustration is meant merely to make clear the meaning of the statement as to the comparative efficiency of indirect and direct use of the same agent. Yet the analogy of the compound lever would not lead us far astray. For credit is, in a way, a system of balanced forces, which can be made to exert a large influence by a relatively small power. When business increases, and a larger volume of exchanges is to be effected, a very small change in the proportion of money assigned to the reserve may satisfy a considerable increase in the volume of exchanges.

Under static conditions, standard money is distributed between reserves and direct money payments in such division as to make its marginal utility for each service the same. If an increase occurs in the volume of exchanges to be performed, or in the supply of standard money, a new apportionment is necessary between the two uses. Just how this new apportionment is made, and the manner in which it affects the value of money, are points that we need to consider.

The conditions are an increased supply of commodities seeking to be exchanged, the same volume of standard money divided between direct and indirect use in making payments, all other circumstances remaining unchanged. The effect of the credit system is to cause the exchanges to be performed with the least possible change in prices.

We must remember that an increased volume of commodities offered for sale is not necessarily a demand for more money. It is a demand for more means of exchange, whether money or credit; and this larger amount of means of exchange may be furnished either

by an increased amount of standard money, or by a greater efficiency of the existing supply, whether that greater efficiency be secured by so-called rapidity of circulation or by increasing the power and scope of credit exchanges.

When the demand for more means of exchange arises, the credit system may, or may not, be in use to the limit of its capacity, as conditioned by the existing reserve and the degree of refinement of the credit mechanism. If it is at the limit of its capacity, more reserve money must be obtained. The money used in direct exchanges, commonly said to be in active circulation, will be drawn on. Hence the marginal utility of the money commodity will rise; the value of money will settle at the point where the new apportionment to reserve use will be sufficient to carry the new volume of credit; and the new amount of direct exchange money will just suffice for the exchanges to be made by ready money payments. The whole volume of exchanges performed will be divided between credit exchanges and direct money exchanges in such proportion as will make the existing money supply sufficient to effect the exchanges, on a somewhat changed price level, through the reapportionment of the money used as reserve and in direct payments. As remarked before, part of the money used in direct payments will be drawn off for reserve, while the remainder will perform the volume of direct exchanges at the different price level; the amount drawn off being such that, with what is left for direct payments and with the volume of exchanges that can be effected through credit, the total volume of exchanges to be effected will be performed. The marginal utility of the money commodity will be raised; in other words,

there will be a fall in the price level, or a retardation of its rise, as is evidenced further by the fact that there is a larger volume of commodities to be exchanged.

We may illustrate the process by tracing a sale in connection with which a credit system is established where none existed previously. A sells B a bill of goods for future payment, draws a bill on him and gets it discounted by C, taking notes in exchange. These notes are paid out by A to D, E, and others. Part of them return to C in such a way as to cancel one another, as when D or E pays a debt to B, and B turns in notes as part payment of the original bill, now held by C. Part of the notes, however, must be paid by C in money. This necessitates his keeping a reserve, and it will cause a withdrawal of some money from use in direct payment. Hence the marginal utility of money changes, a division of the money for the two modes of serving its purpose is made, as previously described, and the value of money will tend to rise.

It is unnecessary here to trace the effect of drawing the metal from non-monetary uses. The operation and its results on the value of money will be similar to what takes place when reserve money is increased at the expense of direct exchange money.

If the credit mechanism is not at the limit of its capacity when the volume of business enlarges the demand for more means of exchange, an additional amount of exchanges may be made on the same reserve. In this case, there would seem to be no rise in the value of the money commodity. Moreover, it is a common phenomenon that credit expands on a rising market; so that there seems to be a contradiction of what has been said. But the contradiction is only apparent. There occurs

a *retardation of the rise of prices*, as credit expands; and, therefore, a relative rise in the value of money, as before. Enlarging credit is accompanied with a rising rate of discount. The discount includes not only interest in the proper sense, but a payment for making the loan in the form of money, or command over money, that is, a payment for the special character of the loan. This is exacted because the growing demand for means of exchange produces relative scarcity of it. When, then, a bill drawn against goods is discounted, the true price of the goods is the face of the bill less that part of the discount which is payment for the loan of capital of a particular kind, for which the demand, for the time, is strong. Therefore, the amount of credit medium of exchange necessary to effect the exchange of the given amount of goods is less than the face of the bill would indicate, and the strain on reserve money is less. Its value will therefore rise less than on the face of things would be expected; and since, according to our hypothesis, trade is brisk, prices rise faster than the marginal utility of money. Hence, the net result appears still as a rising price level, but at a retarded speed. When the discount rate rises high enough, the payment in discount for the loan of the specific article (money, or command over it) cuts too far into the profit from the sale of the goods, and credit stops expanding. Then a positive fall (rather than a negative fall, or retarded rise) of prices ensues. I may remark in passing that a similar argument might have been used to show the effect of an increased demand for credit when the credit system is at its limit of capacity.

A similar series of phenomena would appear if there were a draft for non-monetary uses upon a portion of

the standard commodity used as money. The draft would doubtless fall first upon the bank reserves and this would be replenished at the expense of standard money in circulation, assuming, of course, that there is no new supply. The effect would be the reapportionment of the standard commodity left for monetary uses between its direct and indirect uses, in such proportion that, the credit demand being what it is, the two together will carry off all the commodities offered in exchange on the market. The marginal utility of money in this case, of course, will be raised by a diminution in its supply for the same demand; whereas, before, the marginal utility was raised by an increase in the demand for the same supply. In both cases the marginal utility of the money article for direct and for indirect payments must be the same. Of course, on the occasion of all such changes, a new equilibrium is established also between monetary and non-monetary uses of the standard; but this, and all that is involved in it, I am taking for granted in this discussion.

The value of money determined by the equilibrium between its direct and indirect use for effecting exchanges, is such that the volume of exchanges is the largest possible under given conditions. In other words, the available money is so distributed between reserve and non-reserve as to perform the largest volume of exchanges under existing conditions of credit and money supply; or, to perform the same volume of busines on a lower price level. In other words, the credit system apportions the money supply so as to secure its maximum utility in effecting exchanges. Hence, it acts persistently through long periods to cause a gradual fall of the price level, in the absence of a new supply of

money; or sets at work forces which counteract the influence of such new supply. To illustrate this point, suppose some improvement in productive processes reduces the cost of their present product to a certain class of producers, say cotton goods manufacturers. They extend their operations to take advantage of the lower cost. To do so they borrow. The cash reserve of the bank is diminished, relatively to liabilities, and perhaps absolutely by cash withdrawals to pay wages, etc. Soon, however, the diminished reserve causes a higher rate of discount, attracts cash deposits, and lessens the amount of exchange money. A new distribution of the available money supply between reserve and non-reserve is made, at a value which will perform the new volume of exchanges. Its value is thus kept pressed close to the changing demand for it, as represented by the volume of goods offered for it.

The greater the degree of cancellation by credit transactions, the smaller the normal reserve needed. The marginal utility of money falls, therefore, for a given volume of exchange, as the credit mechanism becomes more refined. Or, a larger volume of business may be done on the same reserve at the same, or only slightly raised, prices. This influence also appears as a stimulant of the upward trend of prices of which the expansion of credit is, considered by itself, the result.

From what has been said it seems that we may conclude :

1. That the introduction of a credit mechanism where none existed would increase the efficiency of the existing money supply, and make possible, at first, a larger volume of exchanges on the old price level, or possibly, on a lower one ; or later on a higher one, which, however,

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would not be raised in so great a proportion as the increase of the volume of business.

2. Similarly, where the credit system is already in operation, a new supply of money may either simply displace some credit exchanges with, possibly, no change in the price level or the volume of business; or, more likely in a progressive community, the credit system will cause the whole money supply to be so apportioned between reserve and direct money payments as to increase the volume of exchanges done by both, on a higher price level at first, but gradually falling as the volume of credit transactions grows.

3. That the expansion of credit transactions tends to raise the value of an existing supply of money and thus retard the upward trend of prices, of which the credit expansion is normally the result. But at the same time, the credit system gives a higher efficiency to part of the money supply, so that the net result of the growth of credit may for a time be a rise of prices. Ultimately, however, the demand for more reserve raises its marginal utility.

4. The greater the ramification and refinement of the credit mechanism, the less the money needed for a given volume of trade.

5. Under modern methods of production with large fixed capital, the credit system exerts a steady influence to depress the price level.

6. These results are accomplished by apportioning the money supply in changing proportion between reserve and direct payment money in favor of the reserve money, to effect the increasing volume of payments, with the result that the marginal utility of money gradually rises, but not so rapidly as the volume of business.